

# **Exhibit U**



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/105,034

03/21/2002

Steven R. Kleiman

NWK-002

4735

7590

05/20/2004

EXAMINER.

NGUYEN, THAN VINH

A. Sidney Johnston  
 Cesari And McKenna LLP  
 88 Black Falcon Avenue  
 Boston, MA 02210

ART UNIT	PAPER NUMBER
----------	--------------

2187

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/105,034		<b>Applicant(s)</b> KLEIMAN ET AL.	
	<b>Examiner</b> Than Nguyen		<b>Art Unit</b> 2187	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 02 April 2004.

2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 17-38 and 42-44 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 17-38 and 42-44 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on 19 August 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>Z</u> .	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____.
---	---

Application/Control Number: 10/105,034  
Art Unit: 2187

Page 2

#### **DETAILED ACTION**

1. This is a response to the amendment/election, filed 4/2/04.
2. Claims 17-37,42-44 are elected. Claims 1-16,38-41 have been canceled.

#### ***Specification***

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: A Method For Writing Contiguous Arrays of Stripes in a RAID Storage System Using Combined Writes.

#### ***Information Disclosure Statement***

4. The reference "DAVID HITZ et al" indicated on the IDS, filed 5/27/03, lacks a date. Therefore, this reference is not considered by the Examiner. Applicant is requested to furnish the publication date of this reference.

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 17-38,42-44 are rejected under 35 U.S.C. 102(b) as being anticipated by DeKoning (US 6,148,368).
7. As to claims 17,33,34,42:

Application/Control Number: 10/105,034  
Art Unit: 2187

Page 3

8. DeKoning teaches a controlling storage of data in a plurality of storage devices each comprising storage blocks comprising: buffering a plurality of write requests associated with data blocks for a single write transaction (7/60-8/13); defining a group of storage blocks, the group comprising a plurality of storage blocks in each of the plurality of storage devices (7/60-67); and associating each data block with a respective one of the storage blocks, for transmitting the association to a storage device manager for processing of the single write transaction (combining multiple requests into a single write; 8/4-12).

9. As to claims 18,43:

DeKoning teaches receiving by a file system the plurality of write requests, and transmitting from the file system to the storage device manager the association for processing of the single write transaction, wherein the storage device manager comprises a RAID layer (7/55-8/13).

10. As to claim 19:

DeKoning teaches associating each data block of at least one of the write requests with storage blocks of only one of the plurality of storage devices (each request is to a specified storage; 7/15-25).

11. As to claim 20,38:

DeKoning teaches defining the group of storage blocks comprises receiving by the file system from the storage device manager configuration information of the plurality of storage devices. (RAID system configuration; 6/42-60)

Application/Control Number: 10/105,034  
Art Unit: 2187

Page 4

12. As to claim 21:

DeKoning teaches the configuration information comprises disk topology information (7/45-59).

13. As to claim 22,23,24:

DeKoning teaches the group of storage blocks comprises more than one contiguous stripe in a RAID group (8/4-7, 13/25-32).

14. As to claim 25,26,29,30:

DeKoning teaches the plurality of storage devices comprises more than one RAID group, and defining the group of storage blocks comprises defining the group of storage blocks from storage blocks in a first RAID group (9/22-32, 15-62-15/6).

15. As to claim 27,28:

DeKoning teaches queuing a plurality of associations by the storage device manager for processing of a plurality of write transactions (schedule writes; 9/56-66, 11/6-26)

16. As to claims 31,32:

DeKoning teaches the group of storage blocks comprises allocated and unallocated storage blocks and comprises selecting an unallocated storage block having a lowest block identifier of any unallocated storage block as a storage block having a lowest storage block identifier of any storage block in the group (3/64-4/26).

17. As to claim 35:

Application/Control Number: 10/105,034  
Art Unit: 2187

Page 5

DeKoning the RAID layer comprises a second plurality of storage devices that each comprise a plurality of storage blocks that mirror storage blocks of the plurality of storage devices, and further comprising storing the data in a group of storage blocks of the second plurality of storage devices (abstract, 5/39-45).

18. As to claim 36,44:

DeKoning teaches performing a parity determination for one of the groups of storage blocks prior to storing, and sharing a result of the parity determination with the other of the groups of storage blocks and selecting one of the groups of storage blocks for performing the parity determination (7/25-30, 7/60-8/22).

***Conclusion***

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Than Nguyen whose telephone number is 703-305-3866. The examiner can normally be reached on 8am-3pm M-F.

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 308-1756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Application/Control Number: 10/105,034  
Art Unit: 2187

Page 6

21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Than Nguyen  
Examiner  
Art Unit 2187

ntv